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From the editor

## Internet development and infrastructure regulation

The general linkage between information infrastructure and Internet services development is widely recognised. If there is no enhanced information infrastructure, there will be no advanced information services. But the specific relations are less well appreciated. Some services can adapt to deficient infrastructure by using imaginative software and information management solutions. Extra infrastructure bandwidth can compensate for certain information service deficiencies, especially relating to speed and quality. But these are limited. The most efficient growth progression is for balanced development of both infrastructure and services, each performing the functions and activities for which it has a comparative advantage.

Less well understood is how regulation can promote or retard either, or both infrastructure and services development opportunities. Regulation is often seen as playing an essentially restrictive, or even negative role, especially by dominant, former monopoly public telecom operators (PTOs). The real task, of course, is the positive role of promoting interconnection and access opportunities for competitors, new information service providers and customers. Yet regulation is not often seen as a catalyst for the development and diffusion of new services. This issue of *Telecommunications Policy* (*TP*) examines some key issues relating to the role of regulation in promoting opportunities for both infrastructure and new services development.

In this issue we also introduce two new features of *TP*, case study reports and book review articles. Case studies present inductive analysis, building on fieldwork and empirical foundations, often assessing the implications of the case for theoretical understanding and/or policy options. The addition of case studies will broaden the scope of research material that *TP* provides to readers. *TP* Case Study Editor, Ben Petrazzini and colleague Agustina Guerrero provide the initial contribution to *TP*'s case study series, examining recent Internet development in Argentina. The recent dramatic increase in Internet growth is attributed primarily to regulatory activity that was specifically directed to promote Internet access and usage opportunities. Yet the authors conclude that Internet penetration is still very low by international best practice standards, and continued development will depend heavily on new private/public initiatives if Internet access is to become universal.

Sean Gorman and Edward Malecki analyse the structure of the Internet provider networks in the US, both public and private. They show how the different network structures affect the competitive positions of the provider networks, and the nature of their integration with other networks. This will be particularly useful in understanding and assessing the growth of global provider networks, especially as the national regulators of many other countries follow Argentina's example and look more closely at the restrictive implications of traditional PTO service definitions, pricing structures, tariff conditions, etc., in the new Internet environment.

International regulation at the regional and global market levels has been an increasing force for telecom market liberalisation in most regions of the world. The content of the WTO telecom agreements of 1998 have been assessed and debated quite thoroughly in *Telecommunications Policy* (see Noam & Drake, 1997) and elsewhere. There has been less attention paid to the procedural and process contributions of the WTO agreement, as a platform for future changes in the specific content of national liberalisation commitments. Chantal Blouin assesses these changes in process as perhaps more significant in that they provide the principles and flexibility that will facilitate follow-on contributions for the long run. This article was prepared before the WTO "Battle in Seattle". However, the broader changes in WTO processes and procedures directed to liberalising access and participation, now anticipated as a result of the Seattle meeting, are likely to make Blouin's assessment even more relevant for the future.

At least for the foreseeable future, the primary providers of the information infrastructure in most countries will be the incumbent operators. It is essential that their efficiency improve and their prices decline at a rapid rate if the new broadband services are to be affordable for the majority of potential users. The article by Ali Ahmed Rushdi provides an empirical examination of the productivity performance of Telstra, the Australian incumbent. The data shows both increasing productivity and reduced output/input margins in the post-reform era suggesting that efficiency is improving and consumers are sharing in the benefits.

The International Telecommunication Union (ITU) is also playing a significant role in facilitating telecom reform around the world. One important contribution it has been making for many years is gathering, comparing and assessing a wide range of relevant and important statistical material relating to both infrastructure and new services development (see for example, ITU publications: *Trends in Telecommunication Reform 1999*, *Convergence and Regulation*; *World Telecommunication Development Report: Mobile Cellular; Challenges to the Network 1999: Internet for Development*.)

Tim Kelly and Mark Woodall provide our current statistics contribution with a summary of recent data on telecom international traffic indicators and revenue settlement trends, shedding further light on the controversial settlements issue that was examined in the last issue of *TP* (24:1).

Reviews of books, reports and other important documents are informative, but occasionally readers would be better served by more comprehensive reviews that place the subject in a broader context and provide a more detailed analysis. Professor Harry Trebing provides the first *TP* review article, examining the recent comprehensive book by Sidak and Spulber, *Deregulatory Takings and the Regulatory Contract*. The reform of public utilities around the world (primarily telecom, electricity, gas and water) has spawned a major debate on the inherited rights and responsibilities of incumbent monopolies when policies are changed from monopoly to competition. A focal point of the debate has been the valuation of past investments in utility assets made in a monopoly environment, and the criteria for determining interconnection and access charges in the new competitive environment. To date, the debate has been pursued most vigorously in the US, although it is now spreading to other countries.

Some economists conclude that economic efficiency requires that prices for interconnection and access to the incumbent's network be set equal to long run incremental cost (LRIC), a forward looking concept in economic theory reflecting optimal network efficiency. Monopoly valuations of past investments in utility assets should be reduced to current competitive valuations. New entrants to the market should not have to pay interconnection or access charges to an incumbent

utility to compensate for past inefficiencies, obsolete plant and/or the continuation of monopoly profits. Sidak and Spulber have mounted the case for preserving the economic rights and investment valuations of the incumbent, arguing that the former monopoly incumbent utilities (and most particularly privately owned utilities in the US) have a contractual relation with the state that must be preserved to the extent possible in the new competitive environment. As one might expect, much of the Sidak and Spulber argument is now before the US courts in a variety of cases brought by incumbent utilities, including US Regional Bell Operating Companies (RBOCs) appealing sections of the Telecommunications Act of 1996, and FCC and state regulatory decisions implementing its provisions. Professor Trebing, a leading authority on public utility regulation over this entire era of US public utility reform, provides readers with a thoughtful review of the Sidak and Spulber argument in its historic legal, economic and regulatory context.

The debate over the economic rights and asset valuations of incumbent former monopolists is by no means confined to privately owned utilities. Indeed, for most publically owned utilities, the problem has an additional dimension. With privately owned utilities, the rights and asset valuations under the monopoly arrangements are known. The debate is over the appropriate valuation methods for the new liberalised environment and the rate of erosion of monopoly rights and valuations. Under government ownership, even these are typically not specified clearly, if at all. Yet in both cases, the fundamental issues are the same. If all the former monopoly rights and asset valuations are preserved, to the extent possible, inefficiency and monopoly profit can be preserved by imposing them as costs on competitors. Thereby competition is restricted and consumers poorly served.

However, if the regulatory standards destroy the incentive to invest in upgrading network infrastructure, an equally unsatisfactory result will occur. This is why the debate between the “incremental costers” and the “monopoly valuers” will be played out in the reform of most utilities in most countries. The regulatory standards adopted in each country will play a significant role in determining the pace and direction of development of both the upgraded infrastructures and the services provided over them. This is why the importance of competent, informed, independent, objective and forward looking regulators, to achieve successful utility reforms will become more and more apparent over the next few years.

## References

- Noam, E. M., & Drake, W. J. (1997). The WTO deal on basic telecommunications. Big bang or little whimper? *Telecommunications Policy*, 21(9/10).

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